Weather Briefing, 8 AM EST 20050122

Portsmouth weather outlook:

A strong winter storm is expected to brush the Portsmouth area Saturday night and Sunday morning. Most of the action will be to the south, with central Massachusetts experiencing blizzard conditions (see http://www.erh.noaa.gov/box/fcsts/BOSAFDBOX.html for a rather alarming weather discussion!). The low center will move northeastward on a track well southeast of Cape Cod, so the major effect in Portsmouth other than some snow (6 inches plus) are strong winds. Monday will start out clear, clouding up by landing time with northwest winds in the 15-25 mph range – temperatures around 20 degrees.

The upper levels currently are characterized by a deep trough centered just off the coast, with a strong ridge over the west central part of the North American continent. The result is some very cold air in the eastern third of the country. It was minus 8 this morning here in Lexington, MA. As the week progresses, this pattern will flatten out, resulting in warmer temperatures in Portsmouth through the week. Warmer is relative – 20s and thirties instead of single digits. The weather service is calling for snow showers Wednesday, but we are basically in a weak high regime on that day, and winds should be quite tame. Highs will be in the mid thirties.

Flight level conditions for Monday and Wednesday.

The cloud and tropopause height forecast for a likely ferry flight can be viewed at situation is much the same as described in yesterday's briefing, with tropopauses well below the aircraft flight levels northeast of a line through the great lakes (http://bocachica.arc.nasa.gov/PAVE/rh_omega/CF_peasetp_300mb_day300.pdf . We can expect high clouds from Minnesota northwestward along the jet stream. Depending on how close the aircraft follows the jet stream on climbout, we can see high clouds right near the beginning of the transit as well (http://bocachica.arc.nasa.gov/PAVE/rh_omega/cf_drydenr_300mb_day212.pdf . Jet stream winds will be about 130 knots. The vortex still ought to be reachable on this ferry flight. The most recent forecast is reasonably consistent with the one issued 24 hours ago by the GSFC ASM model (450K vortex position). See http://bocachica.arc.nasa.gov/PAVE/asm_rh_omega/TH_peasetp_450K_day300.pdf

For Wednesday, the vortex 450K has pulled back a bit. PSC temperatures are at 70N near the western Greenland coast. (http://bocachica.arc.nasa.gov/PAVE/asm_rh_omega/TH_peasetp_450K_day412.pdf ) Flight level clouds look favorable (http://bocachica.arc.nasa.gov/PAVE/rh_omega/TR_peasetp_35kft_day412.pdf. There is a large region of low tropopauses associated with the deep trough that has moved off the coast. Even where the tropopause is not low, cloud altitudes appear to be below 35 kft.

A note about the cloud fraction forecasts from NMC. I believe they overstate the total cloud fraction by a substantial amount. I think there is too much low and boundary layer cloud forecast.